

AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) Radically coupled polytetrafluoroethylene polymer powder comprising at least one of radiation-chemically and plasma-chemically modified polytetrafluoroethylene powder including a surface, and homopolymers, copolymers or terpolymers radically coupled on the surface via a reaction in dispersion or in ~~substance~~ solid.
2. (Previously Presented) The radically coupled polytetrafluoroethylene polymer powder according to claim 1, wherein the polytetrafluoroethylene powder is radiation-chemically modified.
3. (Previously Presented) The radically coupled polytetrafluoroethylene polymer powder according to claim 1, wherein the polytetrafluoroethylene powder is radiation-chemically modified with a radiation dose greater than 50 kGy.
4. (Previously Presented) The radically coupled polytetrafluoroethylene polymer powder according to claim 3, wherein the polytetrafluoroethylene powder is radiation-chemically modified with a radiation dose greater than 100 kGy.
5. (Previously Presented) The radically coupled polytetrafluoroethylene polymer powder according to claim 1, wherein the polytetrafluoroethylene powder is radiation-chemically modified in presence of reactants.

6. (Previously Presented) The radically coupled polytetrafluoroethylene polymer powder according to claim 5, wherein the polytetrafluoroethylene powder is radiation-chemically modified under influence of oxygen.

7. (Previously Presented) The radically coupled polytetrafluoroethylene polymer powder according to claim 1, wherein styrene, acrylonitrile, maleic anhydride, acrylic acid, (meth-) methyl acrylate, vinyl acetate, glycidyl methacrylate, (meth-) acrylamide compounds or mixtures thereof are added as polymerizable, olefinically unsaturated monomers.

8. (Currently Amended) Method for producing a radically coupled polytetrafluoroethylene polymer powder comprising at least one of radiation-chemically and plasma-chemically modified polytetrafluoroethylene powder including a surface, and homopolymers, copolymers or terpolymers radically coupled on the surface via a reaction in dispersion or in ~~substance~~ solid, comprising ~~reactively converting~~ reacting polytetrafluoroethylene powder that is at least one of radiation-chemical and plasma-chemical modified and has ~~with~~ reactive perfluoroalkyl-(peroxy) radical centers, in dispersion or ~~substance~~ solid with addition of polymerizable, olefinically unsaturated monomers, so that a ~~polymer-forming reaction to homopolymers, copolymers or terpolymers on the~~ radically coupled polytetrafluoroethylene polymer powder is obtained.

9. (Currently Amended) The method according to claim 8, wherein the polytetrafluoroethylene powder with reactive perfluoroalkyl-(peroxy) radical centers after at least one of radiation-chemical and plasma-chemical modification is subjected to a tempering at low temperatures ~~yielding the reactive perfluoroalkyl (peroxy) radical centers~~.

10. (Previously Presented) The method according to claim 8, wherein the polytetrafluoroethylene powder comprises radiation-chemically modified polytetrafluoroethylene powder.
11. (Previously Presented) The method according to claim 8, wherein the polytetrafluoroethylene powder is radiation-chemically modified with a radiation dose greater than 50 kGy.
12. (Previously Presented) The method according to claim 8, wherein the polytetrafluoroethylene powder is radiation-chemically modified with a radiation dose greater than 100 kGy.
13. (Previously Presented) The method according to claim 8, wherein the polytetrafluoroethylene powder is radiation-chemically modified in presence of reactants.
14. (Previously Presented) The method according to claim 8, wherein the polytetrafluoroethylene powder is radiation-chemically modified under influence of oxygen.
15. (Previously Presented) The method according to claim 8, wherein the polytetrafluoroethylene powder is a micropowder.
16. (Previously Presented) The method according to claim 8, wherein the reaction is performed in an autoclave or in a stirred tank or in an extruder/kneader.
17. (Previously Presented) The method according to claim 8 wherein olefinically unsaturated monomers comprise at least one of styrene, acrylonitrile, maleic anhydride, acrylic acid, (meth-)methyl acrylate, vinyl acetate, glycidyl methacrylate and (meth-)acrylamide compounds.
18. (Previously Presented) The method according to claim 8 wherein the olefinically unsaturated monomers comprise a mixture of monomers.

19. (Previously Presented) The method according to claim 8, wherein the olefinically unsaturated monomers comprise at least one of macromeres and oligomers.

20. (Previously Presented) The method according to claim 8, wherein the polytetrafluoroethylene polymer powder includes functional groups which in subsequent reactions are reacted with other low-molecular, oligomeric and/or polymeric substances.

21. (Previously Presented) The method according to claim 19, further comprising incorporating the polytetrafluoroethylene polymer powder in plastics/polymers.

22. (Previously Presented) The method according to claim 20, wherein the polytetrafluoroethylene polymer powder is incorporated into at least one of elastomers, thermoplastics and thermosets.